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THE INFLUENCE OF BELIEFS ON PEOPLE'S PERCEPTION OF
ILLNESS IN THE SPANISH GOLDEN AGE

by

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A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in Spanish
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ABSTRACT

Medicine is a field of science that is always changing and promoting new ideas and innovations. Throughout history, medicine has been an important factor in the lives of people around the world since the beginning of civilizations. This study focused on the literature of medicine as it relates to the Spanish Golden Age period. By looking at the history and critical studies in medicine during sixteenth and seventeenth century Spain as well as during the pre-colonial period in America, this thesis overviews the effects and influences in regards to health and illness in Spain and the Americas during the Spanish Golden Age era.

DEDICATION

I would like to dedicate this thesis to my amazing and loving parents, Luis and María Cruz, whose endless and unwavering support and love drive me to do all I can do to make them proud.

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I would like to acknowledge my entire committee for guiding me through this process and especially for helping me narrow my focus for this thesis. I greatly appreciated and respected all of their advice and suggestions.

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CHAPTER I: A HISTORICAL OVERVIEW OF SPAIN'S MEDICINE

Taking into consideration that medicine is a science that is always changing and permitting constant innovations, there are some aspects such as the structure of the human body, the shape and movement, and the process of finding cures for humans that are permanent (Guerra 1). It is believed that medicine was developed around the same time as the first civilizations began developing their own distinct cultural ideas and politics (Guerra 5). As a result, the development of medicine depends on the politics of a particular society. If a society does not have the practice of medicine as a priority, then there will be no curiosity in this field and the new ideas will not prosper under this direction. Medicine has been impactful and influential in other areas of the sciences such as in philosophy, economics, and religion (Guerra 5).

It is said that the Ancient Egyptians were the “most healthiest of all men” due to their dry weather and their special attention to the practice of medicine (Guerra 75). Each medic in Egypt would specialize in a field and only in that one field. The most ancient medical textbook can be found in Egypt and is known as the *Papiro Kahun Ginecologia*, which discusses complaints of female health (Guerra 77). The first medical doctor known in any register was an Egyptian by the name of Hesy-Ra. The first female medical doctor was also from Egypt and was named Peseshet (Guerra 86). The Babylonians in Mesopotamia are credited as the pioneers in realizing the medical aspects of diagnostics, prognostics, physical exams, and prescriptions (Guerra 62). This is illustrated in their ancient medical book known as the *Diagnostic Manual* written by Esagil-kin-apli in 1050 AC. Many cultures have contributed to the development of medicine, such as the Indians, the Chinese, the Greeks, and the Romans.

Based on these findings, it is very interesting to notice how medicine has progressed in conjunction with the culture and civilization of the first groups of people on the planet. It should not be a surprise that the first instances of formal medicine came about through the first civilizations that were rich in resources because these resources provided them with a better opportunity to discover plants and herbs that were utilized in the healing of the population. Based on my research on-site, it is important to notice that ancient societies had already established modern ideas such as physical examinations and *sick leave*, where they could miss work without any penalty and continue to collect their salary. It is their merit the fact that these ancient civilizations were the first to document the process of doing diagnostic and giving symptoms of a particular illness. In addition to these innovations, they also had a vast knowledge of anatomy and physiology that they had to learn on their own with only the human body as their guide.

A. An introduction to the history of Spanish medicine in 17th century Spain

One of the sections of this study will focus on an aspect of Spain's medical history in terms of their infirmaries of ladies and maids in the royal court of the 17th century. Soledad C. Diez, a researcher in this field, explains that her investigation related to this subject was remarkably difficult because there was not enough reputable information about the infirmaries in the Spanish royal court. As a result, this topic does not make much of a dent in the history of medicine as it relates to Spain. Nevertheless, scholars rely on various first-hand accounts and documents from this period that discuss this specific topic. Due to these primary sources, this topic is accessible to investigate since they provide trustworthy statements to assist in understanding how the medicine of women and maids was practiced in 17th century Spain.

In order to begin, there must be a precise definition of what an infirmary was like at that period in time. The infirmary was a room in a house that was specifically used to cure the ill (Diez 64). The nurse was in charge of the room and of taking care of the sick. At that time, there were infirmaries inside the royal palace and inside of some specially elected houses in the surroundings of the palace. It was much more difficult to have access to an infirmary that was not in the palace but, at the same time, it was considered a privilege (Diez 64). In 1680, the queen, María Luisa de Orleans, assigned two locations as infirmaries, one for the ladies and the other for the maids of the queen. Ladies and maids used the facilities of the infirmaries as well as the officials and male guests of the Royal House (Diez 67). There was also special medical attention given to those who took care of the prince and infants. These women were treated as royalty and with respect in relation to their health and diet because they were the ones who were in constant contact with the prince, and the adults of the palace did not want the housewives to become sick when they were around the prince or infants. With every use of the infirmary there needed to be payment for the services. The payments were made with animals and food, specifically with chicken, meat, bacon, or biscuits. Chicken was the most popular form of payment, but they were also paid some kind of currency (Diez 67). As mentioned previously, the infirmary was a place where sanitary assistance was provided and the nurse was responsible for the sick inside and outside of the palace (Diez 73). In that time, nutrition and health were very important aspects of the Spanish society due to the large majority of plagues and illness brought to Spain from the Indias (the American continent). To avoid illness people would take medications and visit specialists when they could afford it (Diez 74).

These previous studies made by Diez about the medicine in 17th century Spain are very

enlightening because they attempt to explain an aspect of medicine in Spain's history that is not readily available. The reader may assume that there were infirmaries to assist the royal family, especially the king and queen, but it would be difficult to interpret that the royal family also assured that their maids in the palace also received health services when they needed them. It is important to mention that it was the initiative of the queens to open and integrate an infirmary as part of the royal service. It is noteworthy that in this time of history people tried to take care of themselves as much as possible given the conditions and the opportunities available to them. It was also pleasant to learn that members of the palace services were treated well in the infirmaries. The royal family devoted time, resources, and attention to women who needed medical care in an era when female needs were not well-understood and in a large majority of the cases, women were not always treated with the necessary dignity and consideration they deserved.

B. An interview on-site in Spain

I had the opportunity to conduct research on-site through an independent study directed by Dr. Martha García who was the professor leading a summer study abroad in Spain in 2011. As part of my research, I had the opportunity to interview Dr. Santiago Artillo, a local doctor from Hospital Universitario Príncipe de Asturias. This interview offered the opportunity to obtain insight into the field of medicine. Dr. Artillo noted that in Spain it takes about nine years to become a doctor. In the United States, it takes typically 10 or more years. The discrepancy in time has to do with the fact that in Spain there is no undergraduate education like in the United States. Students who want to become a doctor must take some specific exams after high school

and achieve the necessary grade to be admitted directly into medical school. After this introductory phase, it takes six years to graduate and three to four years to do a specialization. In the six years it takes to complete medical school in Spain, students only take science classes and courses related to the human body. There is no time assigned in their schedule to take literature or humanities classes. During this interview, Dr. Artillo shared that although he did not pursue any other interests apart from medicine, mostly because he does not have any other interest, it does not mean that medicine cannot be combined with other branches of science or humanities within this profession. For example, many medics in Spain conduct research in order to write and publish a book with their findings or even simply write about a topic that they find interesting such as history, which may contribute to the national and international field of medicine.

Currently in Spain, there are plenty of opportunities to conduct research projects. In fact, every year there are more people interested in conducting research than actually available research projects. Investigators are not well compensated and this field is considered an unstable profession; therefore, Spaniards travel abroad to conduct their research in countries such as the United Kingdom, Switzerland, and the United States. After this interview with Dr. Artillo, I had the opportunity to visit and tour the facilities at the hospital and observe different laboratories such as the genetics lab and the biochemistry lab. I also had the privilege to visit the surgery floor and observe first-hand surgeries, such as the removal of a tumor, that were being conducted the day of my visit. Overall, this interview and hospital visit provided me with a more complete vision, comprehension, and understanding of modern medicine in Spain.

CHAPTER II: RESEARCH INTERESTS

As part of future research plans on this topic, I would like to further investigate how medicine relates to Spain, how Spain participated in the evolution of medicine, and lastly, its impact on this field of study in the American continent. For example, an area that would be interesting to explore would be the medicine in the Americas before and after they were colonized by Spain. It is highly probable that a great deal of medical practices and influences were taken to the New World from Spain. It would also be beneficial to learn and then compare and contrast how medicine evolved in the Americas compared to the medicine of Spain at the same time. As a preliminary preparation within this topic, this thesis will be the compilation of the history of medicine in Spain in conjunction with the history of medicine in the Americas.

CHAPTER III: CRITICAL STUDIES

A. Critical studies in medicine during the Spanish Golden Age: 16th and 17th centuries

The major areas of medicine during the sixteenth century in Spain include the beginnings of medical licensing, dissection, education in anatomy, physiology and surgery; the role of religion in health care and teaching the colonies about medical practices and skills (Price 864). During the fifteenth and sixteenth centuries, Spain was dominant in the practice of medicine and the way in which it was monitored than any other country in Europe (Newson 370). This is illustrated by laws set forth by the Crown in 1477 that introduced the first *Protomedicatos*, the medical regulatory and licensing boards (Price 864).

During the sixteenth and seventeenth centuries there were many Spanish physicians and surgeons of importance who contributed to the history of medicine that established the foundation for the future generations of physicians and medical practitioners. Juan de Vigo is often regarded as the first Spanish surgeon, he was also the physician of Pope Julius II from 1503-1513 (Price 867). Another famed surgeon during the same time period as Juan de Vigo was Francisco de Arceo. He emphasized "simplicity, cleanliness, and a proper humility on the part of the practitioner" (Price 868); consequently, his treatments were well-appreciated and people from all over Europe used to travel to Spain just to meet with him.

Medicine in sixteenth century Spain focused primarily on Galen and Hippocrates's viewpoints on medicine, which include humoral medicine. Humoral medicine focuses on the balance of the four humors: blood, phlegm, black bile, and yellow bile which were naturally found in the human body (Newson 371). During that time period sickness was viewed as a

punishment from God for sinning or the Devil, as a result, humoral medicine was widely accepted without looking into other factors that could have contributed to illnesses (Newson 371). However, several thinkers of the time were beginning to find alternative reasoning for the causes of illnesses. One of those thinkers was Paracelsus, who suggested that an external factor contributed to sicknesses instead of a divine entity (Newson 371). Paracelsus also believed that the external factor could be found and treated before it was allowed to cause more damage to the body (Newson 371). These intellectual medical advancements and movements were not welcomed by the Counter Reformation, who wanted to keep the focus on the Catholic Church's role in health care and medicine (Newson 371). The Church supported the viewpoint that being sick was a direct form of punishment; thus, they established hospitals and hospices as a form of Christian charity to care for the sick rather than attempt to cure them (Newson 372).

It is important to note that while outbreaks were common and occurred rampantly throughout the New World, Spain also experienced epidemics throughout the 16th century; thus, it is important to discuss how the Spaniards were able to cope with this situation. The diseases that spread throughout Spain included but were not limited to that of *tabardillo* (believed to have been typhus) in 1557 and 1570, smallpox in 1585 and 1586, and the plague in 1596 and 1599 (Price 869). One physician, Juan Tomás Porcell of Sardinia, was the first to perform systematic post-mortems on the victims of the bubonic plague in Zaragoza in 1564 (Price 870). Porcell studied the bodies of the deceased to further understand all aspects of the plague as well as to discover possible cures (Price 870).

B. Critical studies in medicine during the pre-colonial period in America

Once Christopher Columbus found America in 1492, there was no delay in transferring and sharing Spanish medical practices to the New World. On Columbus's second voyage in 1493 Diego Álvarez Chanca served as the official physician to the colonies (Price 871). Later in the 1560s the physician Francisco Bravo arrived in New Spain and became the one to publish the first medical monograph filled with medical illustrations in the Americas (Price 872). Following the publication of this manuscript several other manuscripts, pamphlets, and books were also published; however, the most important and vital of these came from Francisco Hernández who stayed in the New World for seven years observing and recording plants, animals, and minerals found in the new land with medicinal purposes in the Americas (Price 872). The final draft consisted of sixteen manuscript volumes filled with detailed illustrations, specifically illustrations and descriptions of over 2,000 new and native plants (Price 872).

Immediately following the discovery of the New World it is important to note that there are many accounts, books, and manuscripts from explorers and men of the time detailing their new surroundings and environment around them. An overwhelming number of these accounts assure that the population of the New World consisted of healthy men and women who were living fruitfully and happily (Ashburn 15). In particular, Frank D. Ashburn makes several references to Bartolomé de Las Casas's five-volume collection *Historia General de las Indias*, in which Las Casas explains his amazement towards the Indians and their health throughout all of New Spain (14).

It is logical that the isolation the native population of the Americas faced shaped their physiology, genetics, physical body, and culture. As a result of isolation the natives of America, pre-Columbus, had a different disease environment than that of Europe and the rest of

the world. Many pathogens were eliminated in the biology of those who migrated into the Americas due to the extreme low temperatures, of which the pathogens could not live or prosper (Duffy 16). The lack of active cases of certain diseases such as malaria and yellow fever in the Americas contributed to the cleansed nature, additionally the migratory lifestyle and low population density worked in their favor in terms of not being able to spread diseases (Duffy 16). Another vital factor in the lack of disease includes the fact that the people of America did not domesticate animals since they were always migrating and moving around. As a result, many diseases that originated from fauna did not infect the population like it did in many parts of Europe, where domestication of animals was common practice in their lifestyle (Duffy 17). With all of this being said, this does not mean that pre-Columbian America was completely free of any kind of disease. In fact, some infectious pathogens, such as a group of bacteria classified as *cocci* have existed even before the existence of humans and as such have always been a part of human life (Duffy 18). The most well-known types of *cocci* bacteria include staphylococcus and streptococcus, of which are typically and naturally found on the skin of almost every human and are relatively harmless although in certain instances each of these bacteria can cause life-threatening diseases such as meningitis and endocarditis (Duffy 18).

It is important to note that the medicine in pre-Colombian America had a variety that some believe was even more complex than that of the Spanish or European forms of medicine. The variation stemmed from their unique and different approach in defining and viewing medicine in their culture. To many native populations, medicine referred to more than strictly diseases and forms of treatment. To them, the word had several concepts attached to it, in particular that of mystery and inexplicability (Vogel 25). They used the word medicine to

identify something that they could not understand or control (Vogel 25). For example, Virgil J. Vogel explains that they called whiskey “medicine water” because they did not understand its effects completely; thus, they were essentially calling it mysterious water (25). Other examples include referring to a horse as “medicine dog” and a gun as “medicine iron” (25). Consequently, their concept of a medicine man dealt with everything that was new, different, mysterious and inexplicable. It is for this reason that the medicine men, otherwise known as shamans, had an array of duties within their tribes. They were healers, sorcerers, seers, educators and priests (qtd. in Vogel 22). These men were responsible for conducting ceremonies in relation to births and deaths as well as enable the traditions of the tribe to their successors and future generations (Vogel 26). In many cases the shamans even acted as the liaison between their respective native tribe and the colonizers (Vogel 26).

Even with the more encompassing definition of medicine that the Native Americans had, we observe a major similarity between the two different types. Both kinds of medicine were rooted in the belief that illnesses were a form of punishment. As stated earlier, the Spaniards believed that being sick was a result of displeasing God and sinning. In the natives' culture illness was thought of as a punishment for disobeying religious taboos or as a product of witchcraft placed upon themselves by an enemy or sorcerer (Newson 373). While medicine in the Americas reflected a lot of magical and spiritual beliefs and connections, it is also important to realize that the Aztecs were fairly knowledgeable about anatomy and medicinal botany during the pre-Colombian times (Newson 374). They even had specialties in the field of medicine such as phlebotomists, bonesetters and even midwives, much like the Spaniards (Newson 374).

As previously mentioned, the medicine in Spain and in that of the Americas before the

Discovery were extremely different; however, some similarities can be seen. It is because of these few similarities that the fusion of medicine between these two cultures, and even the culture of Africa as a possible third partner, was able to occur (Newson 374). The main similarities found include that of viewing sickness as having a supernatural cause, practicing in rituals and using medicinal botany as a means for cures (Newson 374). In research it has often been noted that there existed a low priority from the Spanish Crown to allocate funds to promote the construction of hospitals and universities for the teaching of health and medicine (Newson 375). Researchers such as Linda Newson suggest that this low level of concern had to do with the fact that they noticed that Europeans in Africa and Asia died more frequently than Europeans who were in contact with the New World, additionally in the New World they also noticed that it was the native population who were experiencing population decline at a faster rate than Europeans (375). By consequence of these two observations, the Crown was not as concerned as they should have been for this situation. Eventually, when the Crown began to notice and concern themselves with the well-being of the native population, they addressed the subject from a different stand point than that of health and medicine. The Crown believed that the natives were dying because of the ill conditions found in the New World and because of overwork (Newson 375). As a result, the orders from the Crown were to regulate the work conditions and limit interaction between those of the New World and those from the Old World instead of providing health care and treatment (Newson 375).

As previously discussed, humoral medicine was widely spread and popular in Spain as well as in much of Europe. When the encounter between the Old World and New World took place, humoral medicine was *filtered down* from the professional and elite level to the popular

level in the Americas (Newson 377). Thus, it became intertwined in the lives of almost everyone living in the New World; however, Newson indicates that the spread of such medicine has little to do with the way in which it was spread and more with why and the convenience in which it was spread (377). Old World diseases were no match against the traditional way of medical life in the Americas and as a result the power and confidence the shamans and healers had was undermined. Additionally, the similarity between the fundamental beliefs of humoral medicine and the native's traditional medicine may have contributed to the acceptance of the new type of medicine being presented to them (Newson 377). Humoral medicine focused primarily on balance, equilibrium, and specifically the balance of hot and cold as well as wet and dry. These beliefs at the heart of humoral medicine were easily transferable to traditional medicine since they also placed major emphasis on balance of the human body and soul in order to be considered a healthy individual (Newson 377).

An additional similarity of the medical practices between the two cultures can be seen in what Virgil J. Vogel refers to as the 'doctrine of signatures,' where the philosophy "like cures like" prevailed under this method of treatment that each group relied on for many years in their respective home continents (33). "Like cures like" was the belief in using treatments whose characteristics reflected similar characteristics to the illness they were trying to cure. For instance, it was believed that yellow plants would fight against jaundice and that red plants would be good for many ailments related with blood (Vogel 33). The medical practitioners who followed this theory did not only focus on the colors of plants but also on the different parts of a plant that could look like the different organs and thus be used to treat that kind of illness (Vogel 33). The influence of this belief system is apparent when the origins of certain plant names are

taken into consideration in both Native American and European medicine. Hepatica is a plant that was once widely used for sicknesses associated with the liver while lungwort was commonly used for pulmonary infections in European medicine (Vogel 33). Within Native American medicine, wormroot was used for worms, bloodroot was used to avoid bleeding since it had red juice as part of its anatomy and snakeroot was named as such for its shape (Vogel 33).

C. Critical studies in medicine during the Spanish colonial: Las Indias

Up to this point this investigation has focused on the medical culture and knowledge present in Spain and the Americas before Christopher Columbus's voyage and immediately after. This section will focus on the specific diseases brought to the New World from the Old World. One of those diseases, and perhaps the most detrimental to the indigenous population, is smallpox. Although it has been completely eradicated today, during the early sixteenth century smallpox was a lethal killer in the New World. Guy Settipane explains that the introduction of smallpox to the Americas occurred in Santo Domingo, Hispaniola in 1518 with a severe epidemic (14). It is believed that smallpox had a lot to do with the population of Hispaniola decreasing from approximately one million before Columbus to just 500 inhabitants by the time of 1548 (Settipane 14). Once the disease reached the mainland, specifically Mexico, in 1519, it spread quickly throughout the entire country and contributed to the devastating decline of so many native populations; Mexico's population alone decreased by one-third by 1531, just twelve years after smallpox was introduced in Mexico (Settipane 14). It is important to note that while smallpox was a major contributor to the death toll amongst the indigenous population, the disease hardly affected the Spaniards, English or French settlers (Settipane 15). Settipane

explains that investigators are still attempting to understand the reasons behind this discrepancy in mortality amongst the different populations (15). There are many hypotheses amongst researchers as to why the virus was so destructive to the natives and not to the Europeans, especially since smallpox was present in Europe since at least the tenth century (Settipane 15). Smallpox has two strains, or forms, to it. One is known as *variola minor*, which has a fatality rate of less than 1% whereas the other strand, *variola major*, has a fatality rate of 15 to 45% (Settipane 15). It is believed that this latter strand is the one that made its way to the Americas and devastated the nation.

Another highly contagious disease that was introduced was *rubeola* (it is not rubella), also known as the measles. Symptoms include coughing, fever, and a rash, those with the measles typically recover; however, complications in the respiratory or central nervous system can lead to death (Settipane 16). Measles was introduced shortly after smallpox was found on the Caribbean island of Hispaniola and spread from Mexico to Honduras and Nicaragua and eventually all the way up to the Canadian Indians (Settipane 16). Epidemic (Louse-Borne) typhus fever was also discovered to have had a role in the depopulation crises facing the natives (Settipane 16).

Yellow fever is an infectious disease that has a short life span caused by a flavivirus that was brought into the New World from Africa with the introduction and incorporation of the African slave trade (Settipane 17). It was prevalent in the West Indies after slavery was introduced in 1501 because the moist and warm climate was perfect for the mosquitoes that carried the disease to prosper and aid in the spreading of yellow fever (Settipane 17). Malaria is the last of the major infectious diseases to have been introduced and responsible for the conquest

of the Americas. As a result of all of these diseases, the native population suffered tremendously and began to disappear in large numbers. The Spanish took notice of this situation and began to worry. Particularly frightened were the priests in the New World, who could not understand why God would allow the natives to suffer in this way as soon as they committed themselves to Him and began attending church on a consistent basis (Ashburn 19).

After an overview of the major diseases that spread from the Old World to the New World, it is necessary to mention a possible disease that spread in the opposite direction- from the New World to the Old World. Christopher Columbus and his crew are controversially credited for supposedly and unknowingly contracting syphilis in the New World and taking it to the Old World upon return (Settipane 30). While the exact origin of syphilis is highly debated, many agree with the concrete fact that the disease specifically began to spread in Europe when King Charles VIII of France ordered an army to invade the city of Naples, Italy in 1495 (Settipane 33). On February 22, 1495 the invasion was officially successful and the city fell to Charles VIII; his army then turned to pillaging and stealing as well as to rape (Settipane 33). By the spring of 1495 Charles VIII's men fell severely ill and as a result began their retreat back to Lyon, France on May 22, 1495 (Settipane 34). Once the men returned home to their respective countries, syphilis spread quickly and violently to much of Europe including France, Germany, Spain, England, Poland, Austria, Switzerland, Russia, and even to Asia, including India, China, and Japan (Settipane 34). This disease was known throughout Europe as *morbus gallicus*, the "French disease," since many believed, especially the Neapolitans in Naples, that the French had brought the disease and caused the illness (Settipane 33). However, the French referred to it as *morbus napolitanus*, or the "Neapolitan disease" (Settipane 33).

As previously mentioned, the exact origins of syphilis remain unknown and controversial to this day. Many European physicians of the time of the epidemic in 1495 were able to conclude and agree upon the historical facts, at least in Europe, that syphilis originated in Italy when French forces invaded Naples in the spring of 1495. Up to this point all of the European physicians who had been studying the disease and all of its aspects had not mentioned a possible New World-American origin to the sickness. It was not until 1526 when Gonzalo Fernández de Oviedo published his work *De la natural historia de las Indias*, where he claims that bark from a native tree called *guayacán* (lignum vitae) is used amongst the Indians to cure buboes, which are skin lesions that occur as a result of inflamed lymph nodes (Settipane 37). In his book, Fernández de Oviedo, explicitly states that the ailment that Europeans were referring to as the “French disease” was in fact a common disease in the New World that originated there and spread to the Old World by means of Columbus and his men (Settipane 37). His assurance and assertion of the origins of syphilis being in the New World created doubt amongst the most educated and experienced physicians throughout Europe. Many researchers and historians believe that his remarks were taken as fact without examining their accuracy at the time because he was so well respected for having spent twenty years living in the New World and acting as chronicler, witness, and observer (Settipane 38). In actuality, researchers believe that there is evidence supporting the fact that the skin lesions Fernández de Oviedo was seeing and claiming as syphilis was instead a different disease known as *pián* in the Caribbean or yaws which is a skin disease common in tropical climates (Settipane 38).

All of the above mentioned diseases caused unprecedented numbers of deaths and depopulation on the newly found continent, especially towards the native population while

seemingly leaving the European settlers alone as has been discussed. However, the settlers had different difficulties in the New World that affected their way of life. Rebecca Earle states that European colonizers did not prosper under the dissimilar circumstances and environment of the New World and that this fact did not go unnoticed by the settlers and caused fear of moving to the New World (688). The potential colonists were afraid that if they moved there, they would lose their European customs and as a result have an altered human body that was no longer European (688). They attributed the climate and difference in diet as the main reasons for why they were falling ill with the climate being the most prominent; however, Earle insists that food and diet cannot be overlooked as possibly the more influential aspects of European health in the New World (690).

Europeans, in particular Spaniards, placed a lot of importance in differentiating their bodies from that of the Amerindians; they did not want their bodies to change drastically. Due to this perception, Spaniards believed that if they ate European food in the New World that they would not morph into a changed body because they were preserving their diet and that they would also be protected from the new and harsh climate (Earle 690). Spaniards recognized this climate as being one of the major reasons why the two groups had such apparent physical differences, in particular with the Amerindians' lack of beard. A Spanish Dominican of the time, Gregorio García, theorized that the hot weather hindered the growth of facial hair in the New World to its inhabitants (Earle 693). When the Spaniards heard his theory, they were disgruntled by the fact that they may lose their sign of manhood and Spanish pride; however, García insisted that the same would not happen to them because they were going to protect their bodies by eating Old World foods such as chicken, turkey, wheat bread and wine (Earle 693). By avoiding

New World foods that were considered as innutritious such as cassava, potatoes and sweet potatoes, they were not going to see a change in their European attributes (Earle 693). García further implies that Amerindians could not have prevented their beard predicament because the climate they lived in did not provide them the proper foods they needed to grow healthy bodies and thus beards (Earle 693).

The special attention Spaniards placed on acquiring their European-based food and the importance of maintaining a properly balanced diet comes from their strong belief in humoral medicine theory, which states that a healthy body requires balance of the four humors that control the body (Earle 694). It was believed that each person had within themselves a unique humoral makeup that directly influenced their “complexion,” which referred to their character as a person as well as their physical characteristics (Earle 694). The humoral balance that controlled complexion could be modified by external forces such as air (from the climate) and diet (Earle 694). These two characteristics along with exercise, the balance between sleep and wakefulness, release and the emotions were regarded as the “six non-natural things” that influence human health and character (Earle 694). Of the six, food is the one that could quickly correct any imbalance in the body. For instance, Spaniards viewed the Native Americans as phlegmatic people who were cold and damp (Earle 694). As such, they could have eaten hot, dry foods such as black pepper to move away from that type of persona (Earle 694). The beliefs behind humoral medicine allowed for Spaniards to understand, to the best of their ability, why it was that their bodies remained fundamentally different from the natives even after having lived in the New World for a length of time and even though they both lived under the same climate. According to humoralism, it was due to the fact that the Spaniards had maintained their diet and balance from

Europe while the natives are different foods that yielded special and distinct bodies (Earle 695).

CHAPTER IV: CONCLUSIONS

As this thesis comes to an end, a brief summary of the main points discussed throughout seems appropriate before further conclusions and implications are drawn in this section. The first major aspect of interest explained in this study is related to humoral medicine and its significance within Spanish medicine in the 16th century. As a reminder, humoral medicine was centered on the importance of balance between the four humors: blood, phlegm, black bile and yellow bile. It was believed that these humors directly controlled the body's health and well being; thus, it was also believed that a disturbance in the humors would cause illnesses and poor health that originated as a form of punishment from God. Medicine in the Americas was similar in this respect because they also believed that diseases stemmed from religious and supernatural powers such as witchcraft and warnings from God. This common and vital similarity allowed for native practitioners to adopt concepts from humoral medicine and include them in their type of belief system towards illnesses. This incident was especially observed when the natives saw how their population was drastically declining after colonization. As a result, natives no longer trusted or believed in their ways and the shamans and doctors needed and wanted to adapt their ways of thinking to see if their people could be saved from the devastating depopulation crisis. As discussed, the depopulation was overwhelming due to the relatively cleansed environment the natives lived in before they were exposed to the Spaniards and other European settlers. The cleansed environment was a consequence of several factors, such as early aged pathogens being killed off due to the extremely low temperatures, lack of active cases, the migratory lifestyle, low population density and the fact that they did not domesticate and therefore were not in close proximity to animals that had their own diseases.

It can be concluded based on this compilation of literatures and the on-site interview in Spain in 2011 that the initial meeting between the Old World and New World had a tremendous influence on the entire world, especially in relation to the impact the diseases had amongst the people of each respective continent. The influx of disease, germs, and illnesses in the Americas accounted for several unprecedented epidemics and played a major factor in depopulation of the native Indian communities on their home continent. The result of the Discovery in 1492 has contributed to the course of history in every aspect imaginable, especially that of medicine. If it were not for the finding of the Americas or if it had happened a century earlier or even later, the course of history would be vastly different. As a result of this study and the interview I was able to conduct with Dr. Santiago Artillo in Madrid, I am able to understand in a deeper way all of the hard work and challenges that have come across within the medical field to get to the point we are in today. Dr. Artillo mentioned that to become a doctor in Spain, prospective students must achieve high marks on national standardized tests in order to be admitted into medical school immediately after high school. He also mentioned that there are many creative opportunities for physicians to combine the arts and humanities with a career in medicine, especially if they have always been interested about the humanities since they were not exposed to those subjects throughout their medical schooling.

After my conversation with Dr. Artillo, I was intrigued by the notion of how I could combine the humanities and the sciences like he has suggested during our discussion. He also briefly discussed how many physicians decide to incorporate research into their chosen careers and as a result are able to investigate an array of topics. With that in mind, I have learned from this research as well as my interview with Dr. Artillo that there are always new perspectives to

explore and new questions to search for within the field of medicine in conjunction with different disciplines and subjects. In sum, the possibilities to study and collaborate among literature and science are endless.

Throughout the researching and writing process for this particular topic there have been certain obstacles that have made this thesis an enjoyable challenge. For instance, an original intent of this thesis was to focus on the role of women in the medical field. Especially how women have contributed to the medical field as doctors, nurses and/or investigators throughout history and the controversies they surely faced in this mission. However and unfortunately there is an extremely limited amount of information and sources known that specifically discuss the role of women in the health field at this time in history and in the desired regions--Spain and the Americas before Columbus. As a result, this study shifted its focus from the role of medical women in history to the history and evolution of medicine pre and post-Columbus in both territories, Spain and the Americas.

Due to the difficulties that presented themselves in regards to women in medicine, it would still be an interesting area of research to be evaluated in the future. Having a record of how women contributed to the world of medicine is invaluable for future generations of historians and physicians alike to learn about the past and use that knowledge for the future. It would be beneficial to investigate the mentality, struggles, and viewpoints of females within the field of medicine during the Golden Age in Spain to examine how they were able to begin breaking barriers and boundaries; as well as how they were viewed by society during a time when women were expected to live a life at home or in the convent. Another area for future research could include a detailed account of the evolution of medicine as a direct result of the

immersion of different cultures in the Americas after Christopher Columbus's voyage. For instance, how did the meeting and fusion of people at that time directly influence new medical procedures, new medications, and even a new culture within the field of medicine.

A. Implications

This thesis attempts to explore how the belief systems of the past influenced people's perception of illnesses in the Americas after the voyage taken by Columbus in 1492. This information of the past is needed in order to have a complete picture of the present and be able to make more reliable projections for the future as it relates to the beliefs of different people. The points of views of the past can be applied and used to better understand the origins of present day beliefs and perceptions on illnesses. Beliefs as old as time have affected and been intertwined with all aspects of society, including religion, health and medicine. As a result, it is imperative to study and reflect upon this knowledge in order to grasp as a physician how and why certain people pertaining to certain groups will think the way they do towards diseases. For instance, to this day there are several groups of people, in several regions around the world, who may consider illnesses as a warning, sign or punishment from God; therefore, they disagree with physicians and may follow a different course of treatment. Consequently, it is important that when physicians are interacting with patients who have different belief systems to not *only* listen to them but to take into consideration the patient's background. Having a solid grasp on the history and evolution of different belief systems and its influence on people's perceptions towards the ill will be highly beneficial in this endeavor. Since everyone is entitled to their own belief system, it is important for those in the medical field to keep this in mind when treating

patients of opposing views. In a 21st century global community, instead of overlooking this significant fact, it would be a more effective approach to use the understanding and knowledge of the past to medicine's advantage to further communicate with patients of different cultures and backgrounds.

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